Piper Diagram
Shows Groupings of Water Types

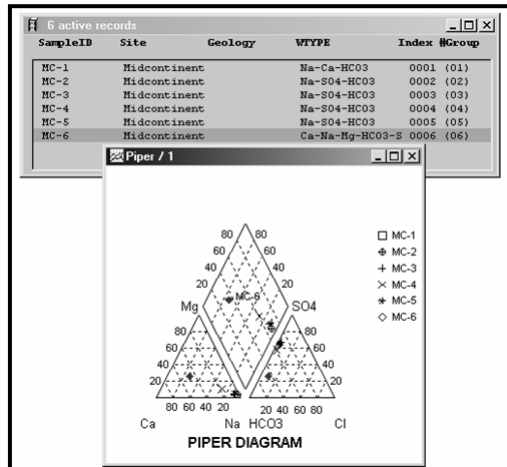| SampleID	Site	Geology	WTYPE	Index #Group
MC-1	Midcontinent		Na-Ca-HC03	0001 (01)
MC-2	Midcontinent		Na-S04-HC03	0002 (02)
MC-3	Midcontinent		Na-S04-HC03	0003 (03)
MC-4	Midcontinent		Na-S04-HC03	0004 (04)
MC-5	Midcontinent		Na-S04-HC03	0005 (05)
MC-6	Midcontinent		Ca-Na-Mg-HC03-S	0006 (06)

PIPER DIAGRAM

Major ions are plotted as cation and anion percentages in meq/l in two base triangles.
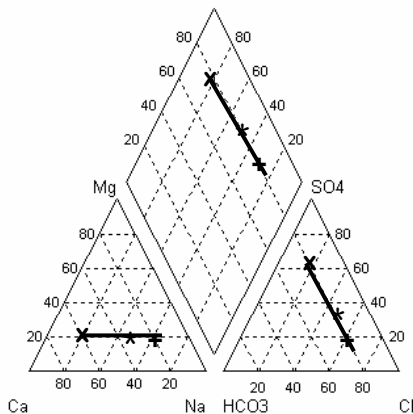
Total ions are are set to equal 100%.

Data points in the two triangles are projected to central diamond.

Allows comparison of a large number of samples.

Shows clustering of samples and water type.

Piper Diagram
Binary Mixing

X Mined

* Mined and Background

+ Background

A water sample that is a mixture of two end members (mined and background) will lie in a straight line between both end members on all three parts of the Piper diagram.

Concept has drawbacks. Post-mixing reactions (I.e., dissolution, ion exchange, precipitation) may obscure the mixing trend.

Use with caution.